

Tri-State Weed Management Area

2003 End-of-Year-Report

Knowledge and implementation of integrated weed management as it relates to the weed players in the Tri-state Weed Management Area continues to expand. This year cooperators thought of new and improved ways to treat noxious weeds, used previous research to anchor and answer new questions, and are seeing the results of our treatment efforts through our monitoring. Highlighting this year's activities were the strategic weed assessment team (SWAT), our second annual herbicide safety, application and training day, and a record attendance at our annual fall meeting which took on a mini-seminar format.

EDUCATION/AWARENESS:

- IDFG and Cottonwood BLM personnel taught Jenifer Junior High students about weeds and their impact on native plants and animals. Over two days, ninety 7th grade students learned about common weed species in their area and the impacts weeds have on the natural environment.



2003 Herbicide Application and Safety Workshop.

- Second annual *Herbicide Application and Safety Workshop*. Approximately 30 participants learned about herbicide safety, proper mixing and application. Licensed applicators received six recertification credits for participating in the workshop. Since the training was on the Idaho Department of Agriculture's recertification website, we had some participants from other WMA's and the public at large.
- BLM's Lynn Danly and IDFG's Matt Lucia provided a look at the yellow starthistle weed threat to Idaho's native ecosystems. The footage will be used as part of an Idaho Public Television *Outdoor Idaho* segment detailing threats to Idaho's wildlands.
- Tri-State provided educational materials to the Nez Perce Soil Conservation District and the Idaho Weed Awareness Campaign. Cooperators set up a weed display at the Idaho County Fair and the Wallowa County Fair.
- In addition to the above items, we conducted two weed tours on invasive species, three poster displays on new technology trials for weed control, and helped to craft an article in the Idaho Statesman about the threat of noxious weeds.
- The Nature Conservancy's Art Talsma and Idaho Weed Awareness Campaign's Roger Batt filmed a television advertisement focusing on education of ATV users about noxious weeds. Tri-State's Eagle Creek served as a filming area.

- Tri-State served as a study area for two graduate research projects. Corey Gucker completed her second field season looking at post fire response of invasive and native plant species. Cathy Sampselle looked at biotic crust components and their relationship to both topography and plant community health.
- A mini-seminar was held at the fall meeting to present findings of research happening in Tri-State. We also presented information on control and biology of rush skeletonweed. This plant is being seen more frequently within the WMA.
- Over 100 volunteers (770 total volunteer hours) worked in concert with cooperators to treat, map, and learn about the impact of weeds on our native flora and fauna.
- Cooperators participated in a Project Learning Tree session for teachers from the Northern Idaho Area. The Idaho Invasive Weeds Toolkit from the Idaho Weed Awareness Campaign was provided to participants along with a presentation on the weed players in the area.
- Initial planning discussions were held with the Appaloosa Horse Club for a 2004 trail ride of the Chief Joseph Trail. The group was made aware of weed issues and the event provides an opportunity to educate more than 400 horsemen on weed prevention, control and impacts.

INVENTORY:

- Volunteers for the Nature Conservancy of Oregon mapped a 113 acre meadow hawkweed infestation using ArcPad and an IPAQ computer.
- Wallowa Resources employees inventoried approximately 1,000 acres of the Nez Perce Tribe "Precious Lands" in Oregon and found some previously unknown sites of rush skeletonweed which were treated this fall. This inventory also expanded the distribution data for common crupina.
- SWAT team members located the first site of purple loosestrife along the Snake River within Tri-State and initial treatment was undertaken.
- Multi-temporal analysis trial began. This technology will assess the use of multi-spectral images taken of the same area at two times during the year. Analysis to detect change in vegetation through the summer will hopefully provide a better detection of weeds in native vegetation.



SWAT team member Thad Miller and iPAQ.

PREVENTION:

- Implemented vehicle wash stations at fire camps.
- Continued weed control in parking areas and gravel sources.
- Discussion of new invader weeds between cooperators.
- Contract stipulations for contractors utilizing heavy equipment in the WMA to clean weed seeds and debris from their equipment prior to entering the area.
- Best Management Prevention Practices for cooperators to include cleaning undercarriages of vehicles to avoid spread of weed seed.
- Wallowa County hay station on a major road into hunting areas where hay potentially contaminated with weed seeds was exchanged for certified weed free hay.

WEED CONTROL:

An interesting type of control being employed by the Oregon TNC is the use of machetes to cut flowers off Scotch thistle and teasel to reduce seed production. This is mostly employed on plants that have escaped other types of control. Hand treatment of species not likely to be controlled by pulling or mowing was done as a final effort to reduce seed production or stress the plants. This is particularly the case with rush skeletonweed, white top, meadow hawkweed, sulfur cinquefoil and dalmation toadflax.



Aerial Transline application.

This year a focused trial of aerial spraying was conducted. This project targeted invading yellow starthistle in good condition Pacific Bunchgrass communities which serve as critical elk habitat. Funding provided by the Rocky Mountain Elk Foundation and the Idaho Department of Agriculture was used to implement the project. Cooperators from the Idaho Department of Fish and Game and The Nature Conservancy ground truthed the project areas and delineated the spray sites with precise GPS units. The files were then downloaded into the helicopter's on-board GPS system for use in navigating by the pilot. Once aerial herbicide application began, spray swaths were precisely marked by the GPS system. The SWAT team assessed the accuracy of this process and found minimal drift of herbicide products when compared with the electronic record.

We essentially had three "strike teams" hitting the ground in an effort to target our new invaders. Wallowa Resources utilized contract personnel with horse sprayers and backpacks to treat remote areas in the Grande Ronde River drainage. The new SWAT team, a cooperatively sponsored three-man crew targeted new invaders in the Craig Mountain Wildlife Management Area. The BLM weeds/fuels crew began its second year in the Corral Creek area targeting the

Upper Corral Special Ecological Area in an attempt to reduce yellow starthistle in good condition Pacific Bunchgrass communities. These crews supplemented the normal crews being used by cooperators to target traditional areas such as travel corridors, recreation areas, and rehabilitation treatments.

Shown below are NET acres of weed treatment. In the steep terrain of the Snake, Salmon and Grand Ronde Rivers, many more acres were combed to find the treatment sites.

Weed Species	Type of Treatment	Acres	Cost*
Canada thistle	Herbicide – Backpack	1.25	187
Cheatgrass	Herbicide – Pickup	43	2,580
Common bugloss	Herbicide – Backpack	7	1050
Common crupina	Herbicide – Pickup	7	420
	Herbicide – ATV	3	240
	Herbicide – Backpack	1	150
	Hand pulling	.5	100
Dalmation toadflax	Herbicide – Pickup	30	1,800
	Herbicide – ATV	10	800
	Herbicide – Backpack	5.2	780
	Herbicide – Horse sprayer	20	3,000
	Hand pulling	2	400
Diffuse knapweed	Herbicide – Backpack	15	2,250
	Hand pulling	5	1,000
Field bindweed	Herbicide – ATV	79	6,320
	Herbicide – Pickup	3.3	198
Hounds tongue	Herbicide – ATV	43.7	3,496
	Herbicide – Backpack	7	1,050
Italian thistle	Herbicide – Backpack	1	150
Leafy spurge	Herbicide – ATV	10	800
	Herbicide – Backpack	3.7	555
	Herbicide – Horse sprayer	25	3,750
Meadow hawkweed	Herbicide – Backpack	1.3	195
	Herbicide – ATV	3	240
	Hand pulling	3	600
Orange hawkweed	Herbicide – Backpack	2.4	360
Perennial pepperweed	Herbicide – Backpack	1	150
Poison hemlock	Herbicide – Backpack	8	1,200
	Herbicide – ATV	7	560
Purple loosestrife	Herbicide – Backpack	.75	112

Weed Species	Type of Treatment	Acres	Cost*
Rush skeletonweed	Herbicide – Pickup	35	2,100
	Herbicide – ATV	100	8,000
	Herbicide – Backpack	3	450
	Herbicide – Horse sprayer	25	3,750
	Hand pulling	28.3	5,660
Russian knapweed	Herbicide – Backpack	5	750
Scotch thistle	Herbicide – Aerial	160	6,400
	Herbicide – Pickup	45.8	2,748
	Herbicide – ATV	322.9	25,832
	Herbicide – Backpack	133.7	20,055
	Hand control (chopping/mowing)	58	11,600
Spotted knapweed	Herbicide – Pickup	110	6,600
	Herbicide – ATV	40	3,200
	Herbicide – Backpack	5	750
Sulfur cinquefoil	Herbicide – ATV	15	1,200
	Herbicide – Backpack	14	2,100
	Hand pulling	1	200
Tree of heaven	Herbicide – Backpack	1.5	225
	Hand treatment (cutting)	1.5	300
White top	Herbicide – Aerial	148	5,920
	Herbicide – Pickup	5	300
	Herbicide – ATV	15.5	1,240
	Herbicide – Backpack	4	600
	Handpulling	3	600
Yellow starthistle	Herbicide – Aerial	1,048	41,920
	Herbicide – Pickup	27	1,620
	Herbicide – ATV	54.5	4,360
	Herbicide – Backpack	91.82	13,773
	Herbicide – Horse sprayer	20	3,000
	Hand pulling	2.5	500
Totals		2,873.12	210,246

*Costs were estimated utilizing a standard cost per acre for each application method. Estimates were \$40/ac for aerial, \$60/ac for pickup, \$80/ac for ATV, \$150/ac for horse sprayer and backpack, and \$200/ac for hand pulling.

BIOCONTROL:

Work continued to quantify damage caused by yellow starthistle biological control agents. In 2001, we had to move our biocontrol collection site due to lack of yellow starthistle. We again had to move our collection site this year. Cooperators also noticed a significant change in the development of yellowstar due to feeding of the biocontrol agents. Plants were very stunted and many did not have undamaged blossoms. We are also noticing a change in the color of yellowstar patches during full bloom. Since so many of the buds are being damaged by insect feeding, there is less of a yellow color.

Cooperators met two times for cooperative collection of *Eustenopus villosus* and *Larinus curtis*. Approximately 70 releases of these insects were packaged and sorted with many of the insects given to cooperators in Oregon and Washington. In addition to the cooperative collections, further collections were made by cooperators individually. Last year we were wondering if there were any portions of the WMA on the Idaho side that did not have biocontrol insects present. The SWAT team actively searched for sites exhibiting less biocontrol feeding and supplemented the insect populations in these areas.



2003 cooperative *Eustenopus* collection

Other weed species targeted with biological control releases were purple loostripe, diffuse knapweed, and dalmation toadflax. Twelve hundred *Galerucella pusilla* were released on purple loostripe along the Snake River. One-thousand *Larinus minutus* were released for diffuse knapweed on the HCNRA and in the Grande Ronde drainage. These insects appear to be providing very good control of the host plant. One of the most recently available agents *Mecinus janthinus* was provided by the University of Idaho and released on dalmation toadflax upstream from the WMA on the Salmon River. Dalmation toadflax has been moving downriver and this action will hopefully decrease the amount of seed moving into the WMA.

We continue to quantify the impacts of biocontrol agents at established sites. Yearly monitoring is still showing the insects attacking in excess of 90% of the yellow starthistle buds. The SWAT team began steps to try and quantify biocontrol impact in terms of yellowstar density and plant morphology. The team established baseline monitoring at ten release sites. Collection parameters included yellowstar density, average yellowstar height, percent cover of yellowstar and the number of biocontrol insects found at each site.

MONITORING:

Tri-State cooperators have been able to refine and improve our treatment methods because we are continuing to monitor. Important things learned include:

- ✓ Once Scotch thistle bolts, chemical treatment is marginal in stopping flowering and seed set. This is consistent with a variety of chemical types.

- ✓ Treatment of rush skeletonweed has been most effective with fall application. Spring to summer treatment tends to burn the plants back and we see re-emergence.

- ✓ Eradication treatment of new invaders is effective in significantly reducing those populations. At present, sites are treated at least twice and sometimes three times. We have four eradication sites where just a few individuals were treated and three where no treatment was required. We are not going to call them eradicated just yet.

- ✓ Treatment of travel corridors has been effective in removing easily transported plant propigules from the roadsides and hopefully reducing the opportunity for yellow starthistle to hitch a ride to new areas.

- ✓ Monitoring of biocontrol release sites through photopoints and yearly assessment is showing some interesting trends in the vegetation composition.

- ✓ Assessment of vegetation in areas where biocontrol is affecting yellow starthistle shows the need for rehabilitation is still high. Many species released by the reduction of yellowstar are annual and not protecting the site from continued invasion by unwanted vegetation.

- ✓ Intensive monitoring of aerial Transline™ treatments shows accurate application and low levels of drift (maximum of 18 meters at this site). This monitoring helps us to have more confidence in buffers for streams or sensitive plant sites.

- ✓ Monitoring of native plant communities before and after treatment has helped to quantify the effects of the various herbicides on these species in yellow starthistle treatment areas.



Original biocontrol release monitoring photo July 1999.



Biocontrol monitoring photo July 2003, same site.

REHABILITATION:

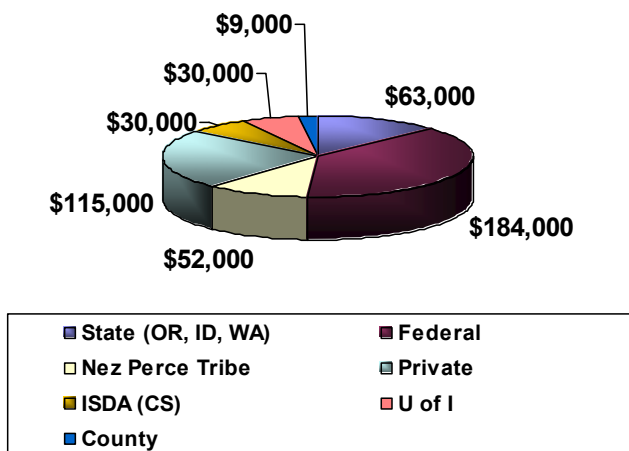
- **Native Plant Garden** (3 acres) - This mid-elevation farm field was planted with 20 ci plugs of native species. The seeds used to prepare the plugs had been collected in 2002 and grown out during the winter and early spring. The site was sprayed with a non-selective herbicide in late spring to reduce competition. Planting took place in June. Unfortunately a dry summer met the newly planted seedlings. Monitoring in 2004 will show if the plants were established enough to become dormant and survive the summer dry spell.

- **Precious Lands** (40 acres) - Nez Perce Tribe personnel were busy working with the Natural Resource Conservation Service to plant farm fields in the Precious Lands to native species.
- **Snake River Benches** (110 acres) – Baker BLM aurally seeded benches above the Snake River that were dominated by annual vegetation. This is a preemptive attempt to establish perennial grasses in disturbed areas before yellow starthistle invades these sites.

REHABILITATION MONITORING:

- **-Power line seeding** (70 acres) – Continued monitoring of this post Maloney Creek Fire project is showing continued persistence by seeded species. The established plants are beginning to tiller. New seedlings are also beginning to be produced from the first generation of plants. Results from this project show the advantages of prevention such as the revegetation of this disturbed site. Further inspection of the China Creek area shows a significant reduction of yellow starthistle due to the competitive exclusion from the seeding.
- **-Precious Lands** (60 acres) - The Nez Perce Tribe returned former farm fields to native species utilizing seed from the locally collected bluebunch wheatgrass along with Idaho fescue, Junegrass and forbs. Monitoring shows the importance of first year weed control. One field where weed control was not accomplished shows a significantly decreased establishment of the seeded species.
- **-Snake River Benches** (85 acres) – Baker BLM aurally seeded benches above the Snake River that were dominated by annual vegetation. Initial monitoring indicates limited success. The site will continue to be monitored to see if additional plants establish in the second and third years.

Total Weed Expenditures



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Total Expenditures = \$483,000

Appendix I Steering Committee

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Appendix II Project Summaries – Cost share funds only

Category	Weed Species	Acres Treated/Inventoried
Biological Releases	Yellow starthistle	2,000
Treated	Spotted knapweed	33.8
	Yellow starthistle	50.7 ground based, 1,000 aerial
	Scotch thistle	212.9
	Leafy spurge	1.6
	White top	15.5
	Purple loosestrife	0.7
	Rush skeletonweed	101
	Dalmation toadflax	5.2
	Field bindweed	79
	Hounds tongue	43.7
	Orange hawkweed	2.4
Inventoried	White top, yellow starthistle	14,000 acres SWAT team and Fixed wing survey, aerial photos.
Restoration/reveg	Tree of heaven, yellow starthistle	47
Monitored	Established yellowstar density monitoring transects	six monitoring sites established
	Monitoring of aerial transline application to include native plant impacts, weed control effectiveness, and accuracy of GPS monitoring system.	six sites monitored
Prevention/education		950 contacts